



Doc Code: AP.PRE.REQ

PTO/SB/33 (07-05)

Approved for use through xx/xx/200x. OMB 0651-00xx
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) 32478-199165
	Application Number 10/726,543-Conf. #7940	Filed December 4, 2003
	First Named Inventor Studer et al.	
	Art Unit 2886	Examiner S. H. Nguyen
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p>		
<p>I am the</p> <p><input type="checkbox"/> applicant /inventor.</p> <p><input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)</p> <p><input checked="" type="checkbox"/> attorney or agent of record. Registration number <u>47,070</u></p> <p><input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. _____</p> <p><u>Steven Schwarz</u> Signature</p> <p><u>Steven J. Schwarz</u> Typed or printed name</p> <p><u>(202) 344-4295</u> Telephone number</p> <p><u>October 23, 2007</u> Date</p>		
<p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below".</p>		
<p><input checked="" type="checkbox"/> *Total of <u>1</u> forms are submitted.</p>		

#902989



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Urs-Peter Studer et al.

Docket No.: 32478-199165

Application No.: 10/726,543

Confirmation No.: 7940

Filed: December 4, 2003

Art Unit: 2886

For: HOLOGRAPHIC OPTICAL ELEMENT

Examiner: Nguyen, Sang H.

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Sir:

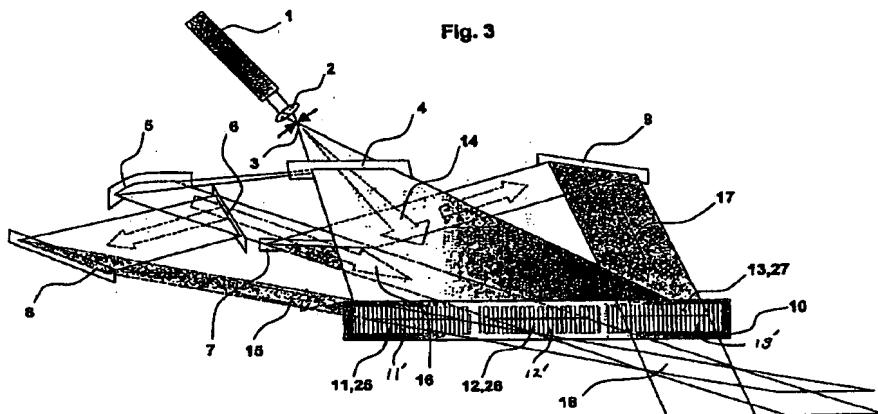
Claims 1-3, 5-11, and 13-19 of the above-identified application have been finally rejected in the U.S. Patent and Trademark Office Action of July 23, 2007. This Pre-Appeal Brief Request for Review of the above-identified application, filed with form PTO/SB/33 and a Notice of Appeal, pursuant to "New Pre-Appeal Brief Conference Pilot Program" (1296 Off. Gaz. Pat. Office 67 (July 12, 2005)) and "Extension of the Pilot Pre-Appeal Brief Conference Program" (1303 Off. Gaz. Pat. Office 21 (February 7, 2006)), presents Applicants' arguments for the allowability of the pending claims. Please charge the Notice of Appeal fee of \$255.00 for a small entity, and any additional fees necessary to our Deposit Account No. 22-0261.

I. The Office Action rejected claims 1, 6, 8, 13-14, and 17-19 under 35 U.S.C. § 103(a) as being unpatentable over Kojima et al. (U.S. Patent No. 4,312,559) in view of Case '061 (U.S. Patent No. 4,455,061). Claims 1 and 13 are the independent claims, and will be addressed separately. The Applicants respectfully submit that this rejection constitutes clear error for the following reasons.

Independent Claim 1

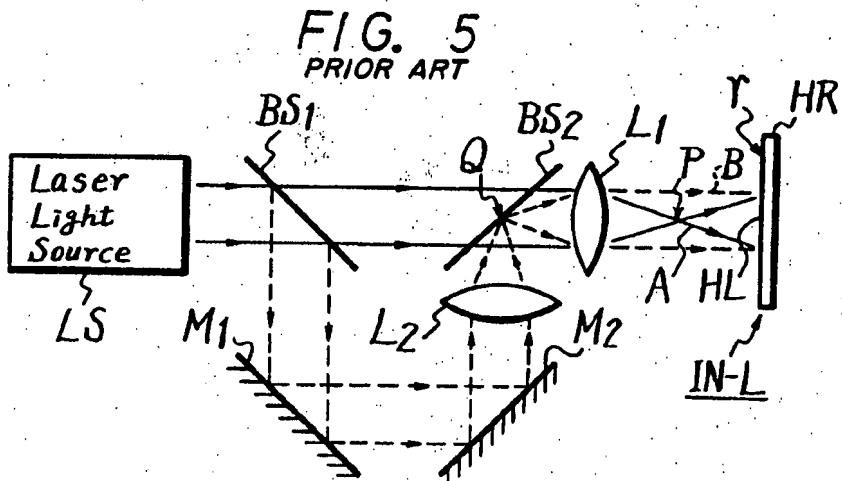
First, neither Kojima nor Case '061 discloses or suggests "at least two interference patterns located on the holographic optical element, wherein each interference pattern is formed through simultaneous exposure of the element to the fan-shaped reference wave front generated by the monochromatic and coherent laser light source and a parallel partial wave front generated by the same

monochromatic and coherent laser light source," as recited by claim 1. Fig. 3 of the present application, reproduced below, illustrates an embodiment of the claimed invention.



Referring to Fig. 3, the holographic optical element (HOE) 10 has three distinct interference patterns 11', 12', and 13'. Each of the interference patterns 11', 12', and 13' is formed through simultaneous exposure of the HOE 10 to the fan-shaped reference wave front 14 generated by the monochromatic and coherent laser light source 1, and a parallel partial wave front 15, 16, 17, respectively, generated by the same monochromatic and coherent laser light source 1. More specifically, interference pattern 11' is formed through simultaneous exposure of the HOE 10 to the fan-shaped reference wave front 14 and parallel partial wave front 15; interference pattern 12' is formed through simultaneous exposure of the HOE 10 to the fan-shaped reference wave front 14 and parallel partial wave front 16; and interference pattern 13' is formed through simultaneous exposure of the HOE 10 to the fan-shaped reference wave front 14 and parallel partial wave front 17. (See, e.g., Present Application at ¶¶ 29-31.) Neither Kojima nor Case '061 discloses or suggests the claimed arrangement.

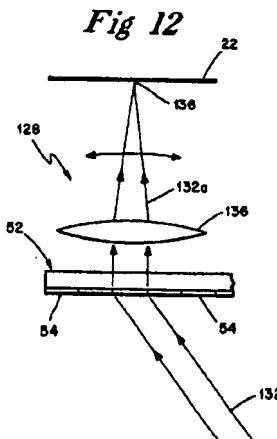
The Office Action relies on Kojima at column 4, lines 40-50, and Fig. 5, for disclosure of the "at least two interference patterns . . .," as claimed. (See, e.g., July 23, 2007 Final Office Action at page 10.) The Office Action apparently aligns the hologram record medium HR of Kojima with the claimed HOE, and aligns the hologram lens portion HL of Kojima with the claimed "interference patterns." However, as shown in Fig. 5 of Kojima, reproduced below, Kojima discloses, at best, a *single* interference pattern at HL.



In addition, Kojima only discloses a reference wave front (generated by laser light source LS) and a *single* partial wave front (created by mirrors M1, M2, and beam splitter BS2), as shown in FIG. 5. Therefore, Kojima does not disclose or suggests “at least two interference patterns located on the holographic optical element, wherein each interference pattern is formed through simultaneous exposure of the element to the fan-shaped reference wave front generated by the monochromatic and coherent laser light source and a parallel partial wave front generated by the same monochromatic and coherent laser light source,” as recited by claim 1. Case ’061 does not provide the missing disclosure, nor does the Office Action appear to assert that it does.

Second, neither Kojima nor Case ’061 discloses or suggests that “if the parallel partial wave fronts are virtually extended through the holographic optical element, the parallel partial wave fronts intersect behind the element in a center of a measuring field,” as recited by claim 1. This is shown, for example, in Figure 3 of the present application, reproduced above, where the three *partial* wave fronts 15, 16, and 17 intersect one another at the intersecting point 18.

Contrary to the allegations in the Office Action, Fig. 12 and/or column 12, lines 8-39 of Case ’061 do not disclose or suggest that *multiple* parallel partial wave fronts intersect behind the hologram 52. Rather, as shown in Fig. 12, reproduced below, Case ’061 discloses that the lens 135 (mislabeled as 136 in Fig. 12) simply focuses a *single* reference beam 132a on a scan spot 136 behind the lens 135. (See, e.g., Case ’061 at 12:17-27, Figs. 11, 12.) The reference beam 132a does not comprise multiple parallel *partial* wave fronts, as claimed. As acknowledged by the Office Action on page 4, Kojima does not provide the missing disclosure.



Third, neither Kojima nor Case '061 discloses or suggests that "when the holographic optical element is used in a measuring apparatus, a fan-shaped wave front projected onto the holographic optical element is diffracted by the at least two interference patterns to form parallel partial wave fronts that intersect in the center of the measuring field," as explained on pages 8-9 of the Amendment filed April 30, 2007. Neither Kojima nor Case '061 relates to a measuring apparatus.

Claim 1 is therefore submitted to be patentable over any reasonable combination of Kojima and Case '061 for at least the three reasons discussed above. Claims 6 and 8 depend from claim 1, and are patentable for at least the same reasons.

Independent Claim 13

First, neither Kojima nor Case '061 discloses or suggests "at least first and second interference patterns located on the holographic film plate," as recited by claim 13. As demonstrated above with respect to claim 1, Kojima discloses, at best, a *single* interference pattern at HL. (See, e.g., Kojima at Fig. 5.) Case '061 does not provide the missing disclosure.

Second, neither Kojima nor Case '061 discloses or suggests "first and second interference patterns each being adapted to receive the fan-shaped wave front and form a partial wave front therefrom, with the partial wave fronts intersecting one another in a center of a measuring field of the measuring apparatus," as recited by claim 13. The Office Action apparently aligns the holographic optical element 52 of Case '061 with the claimed HOE. However, the holographical optical element 52 of Case '061 does not have "first and second interference patterns," as claimed. Moreover, the holographic optical element 52 of Case '061 does not have "first and second interference patterns each being adapted to receive the fan-shaped wave front and form a partial wave front therefrom, with the partial wave fronts intersecting one another in a center of a measuring field of the measuring apparatus,"

as claimed. Instead, the holographic optical element 52 of Case '061 takes a readout beam 132 and deflects it onto a scan spot 136 behind a lens 135. (See, e.g., Case '061 at 12:17-27, Figs. 11, 12.)

Nowhere does Case '061 disclose that the holographic optical element 52 forms any partial wave fronts from the readout beam 132. Kojima does not provide the missing disclosure.

Claim 13 is therefore submitted to be patentable over any reasonable combination of Kojima and Case '061 for at least the two reasons discussed above. Claims 14 and 17-19 depend from claim 13, and are patentable for at least the same reasons.

II. The Office Action rejected claims 2, 3, 5, and 15-16 under 35 U.S.C. § 103(a) as being unpatentable over Kojima in view of Case '061, and further in view of Case '037 (U.S. Patent No. 4,547,037).

Claims 2, 3, 5, and 15-16 depend variously from claims 1 and 13, which, as demonstrated above, are patentable over Kojima and Case '061. Case '037 does not remedy the deficiencies of Kojima and Case '061. Therefore, claims 1 and 13, as well as dependent claims 2, 3, 5, and 15-16 are patentable over Kojima, Case '061, and Case '037.

III. The Office Action rejected claims 7 and 9-11 under 35 U.S.C. § 103(a) as being unpatentable over Kojima in view of Case '061, and further in view of Käser (U.S. Patent No. 4,955,694).

Claims 7 and 9-11 depend from claim 1, which, as demonstrated above, is patentable over Kojima and Case '061. Käser does not remedy the deficiencies of Kojima and Case '061. Therefore, claim 1, as well as dependent claims 7 and 9-11, are patentable over Kojima, Case '061, and Käser.

CONCLUSION

As shown above, the rejections of claims 1-3, 5-11, and 13-19 constitute clear error. Applicants therefore respectfully request that all presently outstanding rejections be withdrawn.

Respectfully submitted,

Date: October 23, 2007



Steven J. Schwarz
Registration No. 47,070
VENABLE LLP
P.O. Box 34385
Washington, D.C. 20043-9998
Telephone: (202) 344-4295
Telefax: (202) 344-8300

#250619